

307/70-4-10-28/10

5(2)

AUTHORS: Klochko, M. A., Gedneva, M. M.

TITLE: Electric Conductivity and Viscosity of Solutions of Lithium-, Potassium- and Sodium Hydroxide in Water - Acetone Mixtures

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 10, pp 2354 - 2359 (USSR)

ABSTRACT: The effect of a non-aqueous solvent on hydration and migration mechanism of the electric conductivity of alkali hydroxides is investigated. The electric conductivity of electrolytes in water - acetone mixtures was also studied by S. V. Serkov (Ref 5). As can be seen from table 1 and figures 1 and 2, the electric conductivity decreases with increasing acetone content. The conductivities of KOH and NaOH approach to each other at increasing acetone content and increasing temperature, but more slowly than in water - dioxane mixtures. At 50 mole% acetone only the conductivities of NaOH and KOH are equal. The dehydrating property of acetone is less than that of dioxane, accordingly, and the elimination of the migration mechanism is attained more slowly. There are 4 figures, 3 tables, and 7 references, 5 of which are Soviet.

SUBMITTED: January 17, 1959  
Card 1/1

GOROSHCHENKO, Ya.G.; GODNEVA, M.M.

Absorption spectra of sulfuric acid solutions of titanium sulfates  
in the visible region. Zhur.neorg.khim. 6 no.6:1453-1456 Je  
'61. (MIRA 14:11)

(Titanium sulfate--Spectra)

GOLUBEVA, M.M.; VEDYANIKOVA, R.D.

Determination of microimpurities in cesium, potassium, and sodium hydroxides. Zhur. anal. Khim. 20 no.8:831-835 '65.  
(MIRA 18:10)

L. Kol'skiy filial AN SSSR, Kirovsk.

L 21768-65 EPF(n)-2/EWT(m)/EWP(b)/EWP(t) Pad/Pu-4 IJP(c)/ASD(f)-3/ASD(m)-3/  
AFMDC JI/WW/HW/JG

ACCESSION NR: AP4029194

8/0078/64/009/004/0996/1001

AUTHOR: Godneva, M. M.

TITLE: Electrodeposition of nickel with niobium, tantalum, titanium and zirconium  
from nonaqueous solutions 27 27 27 27 27

SOURCE: Zhurnal neorganicheskoy khimii, v. 9, no. 4, 1994, 996-1001

TOPIC TAGS: electrodeposition, alloy electrodeposition, electroplating, nickel, niobium, tantalum, titanium, zirconium, cobalt, nonaqueous electrolyte, zirconium nickel niobium alloy, titanium nickel alloy, zirconium nickel alloy, niobium nickel alloy

ABSTRACT: The possibility of electrodepositing Ni-Nb, Ni-Ta, Ni-Ti, and Ni-Zr alloys from nonaqueous solutions of  $\text{NiCl}_2$  and Ta, Ti, Zr or Nb chlorides and certain Nb complex compounds was investigated. No deposits were obtained from alcoholic solutions of  $\text{NiCl}_2$ ,  $\text{NbCl}_5$ ,  $\text{TaCl}_5$ ,  $\text{TiCl}_4$ ,  $\text{ZrCl}_4$ ,  $\text{ZrOCl}_2 \cdot 8\text{H}_2\text{O}$  taken individually, nor from the solutions of Nb cupferron complex, Nb rhodanide or Nb hydroxyquinoline complex in alcohol; ether, trichloromethane, carbon tetrachloride, or benzene. Ni can be deposited from alcoholic solutions saturated with dry  $\text{HCl}$ . Co (containing only about 0.03% Nb) was deposited from an alcoholic solution of Co and Nb chlorides.

Card 1/2

L 21768-65

ACCESSION NR: AP4029194

rides with a very low yield. Although Nb will not deposit from an alcoholic solution of  $\text{NbCl}_5$ , the addition of even a small amount of  $\text{NiCl}_2$  (0.1-0.3 gm./l.  $\text{NiCl}_2$ , 40-100 gm. /l.  $\text{NbCl}_5$ ) promotes the deposition of Nb-Ni alloys. Ti and Zr similarly do not deposit by themselves but will coprecipitate with Ni from alcoholic solutions containing  $\text{TiCl}_4$  or  $\text{ZrCl}_4$  with  $\text{NiCl}_2$ , at a current density of 0.1-0.3 amp/cm<sup>2</sup>. Ta does not precipitate, even in the presence of  $\text{NiCl}_2$ . Neither Zr nor Ni precipitates from  $\text{ZrOCl}_2 \cdot 8\text{H}_2\text{O}$ - $\text{NiCl}_2$ - $\text{C}_2\text{H}_5\text{OH}$  solutions; however on addition of  $\text{NbCl}_5$ , an alloy of Zr-Ni-Nb is deposited. "Lattice parameters were determined by D.L. Rogachev." Orig. art. has: 2 tables.

ASSOCIATION: none

SUBMITTED: 12Sep62

ENCL: 00

SUB CODE: MM

NO REF SOV: 013

OTHER: 009

Card 2/2

GODOVANNYY, B.A. (Moskva)

Alimentary intoxications caused by staphylococcus. Fel'd. 1 akush.  
26 no. 2:3-6 F '61. (MIRA 14:4)  
(FOOD POISONING) (STAPHYLOCOCCAL DISEASE)

GODOVANNYY, B.A.

Primary sensitivity of Staphylococcus pyogenes to antibiotics of the tetracycline series and its changes during the treatment of staphyloderma with chlortetracycline. Antibiotiki 6 no.3:276-279 (MIRA 14:5)

Mr '61.

(STAPHYLOCOCCAL INFECTIONS)

(AURECOMYCIN)

1955 A, 1. T.

GODNEVA, M. T. -- "The Effect of Gas and Light Conditions on the Accumulation of Fat in Seeds." Acad Sci U.S.S.R. Inst of Plant Physiology imeni K. A. Timiryazev. Moscow, 1955. (Dissertation for the Degree of Candidate in Biological Sciences)

SO: Knizhnaya Letopis', No 1, 1956, pp 122-124, 124



USSR/Cultivated Plants. Cereals.

M

Abs Jour: Ref Zhur-Biol., No 17, 1958, 77618.

Author : Kazanovich, Ya. N.; Godneva, M.T.  
Inst : Institute of Biology AS BSSR.  
Title : Dynamics of the Accumulation of Carbohydrates in  
Different Varieties of Corn in the Process of Vege-  
tation.

Orig Pub: Byul. In-ta biol. AN BSSR, vyp. 2, 1956 (1957), 145-  
148.

Abstract: The greatest quantity of carbohydrates were accu-  
mulated at the end of flowering. The content of  
starch in the ears increased to milky ripeness.  
In the ears and in the green mass before milky  
ripeness, soluble sugars predominated in compari-  
son with starch.

Card : 1/1

31

APPROVED FOR RELEASE: 09/19/2001

CIA-RDP86-00513R000615520010-1"

USSR/Cultivated Plants. Grains.

Abs Jour: Ref Zhur-Biol., No 5, 1958, 20270.

Author : L.P. Lagun, Ya. N. Kazanovich, M.T. Godneva.  
Inst : Not given.  
Title : Biological Features of Corn Varieties in the Belorussian  
SSR.  
(Biokhimicheskaya kharakteristika sortov kukuruzy v Belo-  
russkoy SSR)

Orig Pub: Vestsi AN BSSR, ser. biyal. n., Izv. AN BSSR, ser. biol. n.,  
1956, No 4, 51-54.

Abstract: In the Botanical Park of the Academy of Sciences of the  
Belorussian SSR an analysis was made of the various  
varieties of corn according to their productivity in  
green stuff and grain, and an estimate was made of the  
carbon and mineral salts in their grains and vegetative

Card : 1/2

20-2-58/60

Significance of Photosynthetic Activity of the Fruit of Oil Poppy in the Development of Seeds and Oil Accumulation Therein

of chlorophyll approaches that of the leaves. Only from the 17th-18th day after the blossoming, the fruits begin to turn pale and their contents of chlorophyll rapidly decrease. The results obtained by the authors of the present paper (Table Nr 1) show that placing plants in light chambers results in a considerable decrease in the contents of oil. This probably has to be attributed to increased humidity. Weight of the poppy-heads, number of seeds per poppy-head, and weight of the seeds changes only little. Placing of plants in dark chambers resulted in disturbance of the normal development of the poppy-heads. After 5 - 6 days, they lost their green color. Both the number of the fully developed seeds and the absolute weight of the seeds decreased as compared to the control plants. Plants in dark chambers accumulated about 3 % less oil than plants in light chambers. When only the leaves were placed in shadow, with the poppy-heads being exposed to light, numerous seeds remained underdeveloped. The developed seeds were of more less weight and had less than half of the oil content of the control plants. Consequently the main nutrition of the oil-poppy seeds takes

Card 2/3

20-2-58/60

Significance of Photosynthetic Activity of the Fruit of Oil Poppy in the  
Development of Seeds and Oil Accumulation Therein

place by supply of assimilates from the leaves. If the leaves are placed into shadow, the contents of oil rapidly decrease, whereas they remain almost unchanged if only the fruit is placed into shadow. The decrease of the number of seeds when the poppy-heads are put into shadow indicate that photosynthetic activity through the fruits is of importance for normal development of the plant. There are 2 tables and 9 references, 8 of which are Soviet.

ASSOCIATION: Institute of Plant Physiology imeni K. A. Timiryazev,  
AS USSR (Institut fiziologii rasteniy im. K. A. Timiryazeva  
Akademii nauk SSSR)

PRESENTED: March 1, 1957, by A. L. Kursanov, Member of the Academy

SUBMITTED: February 27, 1957

AVAILABLE: Library of Congress  
Card 3/3

MIRONENKO, A.V.; GODNEVA, M.T.

Studying the amino acid composition of proteins and free amino  
acids of lupine varieties with and without alkaloids. Biol. Inst.  
biol. AN BSSR no.3:129-132 '58. (MIRA 13:7)  
(LUPINE) (ALKALOIDS) (AMINO ACIDS)

ZYUK'YOV, I.G. [Ziul'kou, I.H.]; KAZANOVICH, Ya.N. [Kazanovich, IA.N.];  
LAGUN, L.P. [Lahun, L.P.]; GODNEVA, M.T. [Hodneva, M.T.]

Effect of different growing conditions on the amount of nutritive  
substances in corn. Vestsi AN BSSR Ser. biial. nav. no.1:28-30  
'58.

(Corn (Maize))

(MIRA 11:5)

MIROSHENKO, A.V.; GODNEVA, M.T.; MAS'KO, A.A.

Studying the role of various organs of lupine in the biosynthesis of alkaloids through the use of tagged atoms. Dokl. AN BSSR 3 no.4: 171-173 Ap '59. (MIRA 12:10)

1. Predstavleno akademikom AN BSSR B.V. Yefeyevym.  
(Lupine) (Alkaloids)

GODNYA, F. I.; ROZENFEL'D, L. G.

Malignant degeneration of esophageal diverticula. Vrach. delo  
no.6:23-26 Je '62. (MIRA 15:7)

1. Rentgenologicheskoye otdeleniye bol'nitsy Shevchenkovskogo  
rayona g. Kiyeva.

(ESOPHAGUS—CANCER)

ERREKY, Vilmos; SOROG, Istvan; GODO, Bela

Static and dynamic examination of transmitting tubes. Hlr techn  
15 no.3:77-85 Mr '64.

1. Research Institute of the Telecommunication Industry, Budapest.



GODO, Bela

Calculating jumps and bead supports on coaxial feed lines.  
Hir techn 16 no.1:11-15 Ja '65.

1. Research Institute of the Telecommunication Engineering  
Industry, Budapest.

RESHETOV, Dmitriy Nikolayevich, doktor tekhn. nauk, prof.; GADOLIN, Viktor Leonardovich, kand. tekhn. nauk, dots.; DRUZDOV, Nikolay Aleksandrovich, kand. tekhn. nauk, dots.; NIKIFOROV, Vladimir Vasil'yevich, kand. tekhn. nauk; CHUVALOV, Sergey Arsen'yevich, kand. tekhn. nauk; KUPERSCHMIDT, L.S., red.

[Laboratory manual on the course "Machine parts"] Laboratornye raboty po kursu "Detali mashin. Moskva, Izd-vo "Vysshaya shkola," 1964. 106 p. (MIRA 17:7)

1. Kafedra "Detali mashin" Moskovskogo vysshego tekhnicheskogo uchilishcha imeni M.Ye.Baumana (for all except Kuperschmidt).

KOMOGOROV, P.R.; KLIMENKO, A.V.; RYAKHOVSKIY, I.Ye.; GODOMILOVA, M.S.

Specific composition of fungi in epidermophytosis. Vest. dermat.  
i ven. 37 no. 10:24-26 0 '63. (MIRA 17:9)

BIHARI, Odon, dr.; GODON, Frigyes, or.

Experiences with the treatment of cancer of the eyelids. Magyar.  
onkol. 7 no.4:215-227 D '63.

1. Országos Onkologiai Intezet.

GODONYI, Otto

The 4th Brno International Fair. Bor cipo 13 no.1:23-24  
Ja '63.

1. Bor- es Cipoipari Igazgatosag.

GODONYI, Otto

The 3d Brno International Fair. Bor cipo 12 no.1:24-26 Ja '62.

1. Bor- es Cipoipari Igasgatosag.

(Brno--Fairs) (Leather industry)  
(Shoe industry and trade)

GODORAZHI, A. I.

Godorazhi, A. I. "Belated diagnosis of syphilis," based on material from the Sakkir Dermatological-Venereological Institute, Voprosy dermato-venerologii, Vol. IV, 1948, p. 5-12,

SO: U-3736, 21 May 53, (Letopis 'Zhurnal 'nykh Statey, No.13, 1949).

BERGER, I., nauchnyy sotrudnik; GODORKO, V., nauchnyy sotrudnik

A new textbook ("Analysis of business administration in commerce"  
by E.IA. Lnetskii, D.IA. Savranskii. Reviewed by I. Berger, V.  
Gorodko). Sov. torg. 33 no.6:58 Je '59. (MIRA 12:8)

1.Ukrainskiy nauchno-issledovatel'skiy institut torgovli.  
(Commerce) (Lnetskii, E.IA) (Savranskii, D.IA.)



GNAT, Tadeusz; GODOROWSKI, Kazimierz

Some observations on social psychiatry. Neurol. neurochir. psychiat.  
pol. 12 no.1:101-109 '62.

(PSYCHIATRY)

GODOROWSKI, Kazimierz; HENISZ, Jerzy

Development of modern trends in social psychiatry. Neurol.  
neurochir. psychiat. pol. 13 no.2:285-292 '63.

1. Z Kliniki Psychiatrycznej AM w Warszawie Kierownik: prof.  
dr A. Jus i z Panstwowego Szpitala dla Nerwowo i Psychicznie  
Chorych w Drewnicy Dyrektor: dr Z. Jaroszewski.  
(SOCIAL SERVICE, PSYCHIATRIC)

BARTOSZEWSKI, Jerzy; GOLCOWSKI, Kazimierz

WISKAD -- multiphasic personality inventory -- in the diagnosis  
of manic schizophrenia. Neurol. neurochir. psychiat. Pol. 14  
no.1:145-151 Ja-F '64.

1. Z Panstwowego Szpitala dla Nerwowo i Psychicznie Chorych w  
Drewnicy (Dyrektor: dr. med. Z. Jarczewski).

GOLDBERGSKI, Kazimierz

Clinical psychology in the USSR. Neurol. neurochir. psychiat.  
Pol. 15 no.2:331-334. Mar-Apr '65.

GODOV, I.F.

Work practice of I.A.Butyrskikh's crew. Razvod. i okh. nedr 27  
no.12:56-57 D '61. (MIRA 15:3)

1. Severo-Kazakhstanskiy gruppovyy komitet profsoyuza.  
(Kazakhstan--Boring)

GODOVANCHUK, N.

At the Korkino open pit. Bezop. truda v prom. 1 no.1:36 Ja '57.  
(MLRA 10:4)

1. Obshchestvennyy inspektor okhrany truda, elektrolinayshchik  
kontaktnoy seti vskryshnogo razreza no. 1 tresta Korkinugol'  
(Chelyabinsk Basin--Coal mines and mining)

VIKTOROV, A.F.; GIMMEL'REYKH, V.A.; L'VOV, P.L.; MIKULICH, I.N.;  
KL'DAROV, M.M.; MASLOV, Ye.P., kand.geograf.nauk, starshiy  
nauchnyy sotrudnik, otv.red.; GODOVANETS, Z.A., red.;  
VERBITSKAYA, M., tekhn.red.

[Daghestan A.S.S.R.; survey of physical and economical  
geography] Dagestanskaya ASSR; fiziko-geograficheskii i  
ekonomiko-geograficheskii obser. Makhachkala, Dagestanskoe  
uchebno-pedagog.izd-vo, 1958. 252 p. (MIRA 12:7)

1. Institut geografii Akademii nauk SSSR (for Maslov).  
(Daghestan--Geography)

ACCESSION NR: AP4043463

S/0075/64/019/008/0993/0996

AUTHORS: Dubrovskaya, G.N; Godovannaya, I.N.

TITLE: Analysis of titanium and thorium sulfides

SOURCE: Zhurnal analiticheskoy khimii, v. 19, no. 8, 1964, 993-996

TOPIC TAGS: titanium sulfide stability, thorium sulfide stability, titanium sulfide analysis, thorium sulfide analysis, thermal stability, oxidation

ABSTRACT: The purpose of this work is to study the oxidizability of titanium and thorium sulfides and to develop a rational method for the chemical analysis of these compounds. A study was made of high temperature oxidation of these sulfides. The stability to oxidation was studied with 270 mesh powder by heating it in an oxygen stream from 300 to 1300°C. The degree of oxidation was determined from the amount of sulfur burned in a definite time interval. Sulfur was determined by absorbing the SO<sub>2</sub> produced in a 3% solution of H<sub>2</sub>O<sub>2</sub> and the obtained H<sub>3</sub>SO<sub>4</sub> was titrated with 0.1 N NaOH in the presence of methylene red-methylene blue mixed indicator. The titration was

Card 1/3



ACCESSION NR: AP4043463

carried out in the course of combustion and the amount of sulfur combusted was determined after each 10 min. It was found that titanium sulfide is stable to oxidation up to 300°C. Above 300°C it begins to oxidize and at 1200-1250°C it is completely oxidized to  $TiO_2$  in the course of 20-25 min.  $ThS_{1.7}$  begins to be oxidized at 500°C and at 1200-1300°C it is completely converted to  $ThO_2$ .  $ThS_2$  is stable up to 500°C and at 500°C it begins to be oxidized. Complete oxidation of  $ThS_2$  takes place at 1300-1350°C. In the presence of Cu complete oxidation of titanium and thorium sulfides is observed at 1000-1100°C. On this basis a method was developed for the analysis of these sulfides by decomposing them in the presence of Cu as a catalyst and determining sulfur by titrating the  $H_2SO_4$  produced during absorption of  $SO_2$  into  $H_2O_2$ . The content of metal in sulfides was determined by heating the samples to a constant weight at 1200-1300°C. Sulfide is converted to oxide. Orig. art. has: 4 tables.

ASSOCIATION: Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR, Kiev (Institute of Ceramic Metals and Special Alloys, AN UkrSSR)

Card 2/3

ACCESSION NR: AP4043463

SUBMITTED: 04Jul63

ENCL: 00

SUB CODE: IC

NR REF SOV: 006

OTHER: 001

3/3

POPCVA, O.I.; GODOVANNAYA, I.N.

Complexometric analysis of some binary alloys. Zhur. anal. khim.  
20 no.3:355-358 '65. (MIRA 18:5)

1. Institut problem materialovedeniya AN UkrSSR, Kiyev.

ГОДОВАННЫЙ, Б.А.

ГОДОВАННЫЙ, Б.А., старший лейтенант медицинской службы

Kit for making extensive examinations for the carrying of dysentery  
and paratyphoid bacilli. Voen.-med.zhur. no.7:84-85 J1 '57.  
(DYSENTERY) (PARATYPHOID FEVER) (MIRA 11:1)

GODOVANNYY, B.A.; PETROSOV, V.V.; SALMIN, L.V. (Moskva)

History of the activity of Russian physicians on the African continent  
in the 19th and 20th centuries. Sov. zdrav. 20 no.7:80-82 '61.  
(MLA 15:1)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta vaktsin i  
syvorotok imeni I.I.Mechnikova.

(AFRICA--PHYSICIANS, RUSSIAN)

GODOVANNYY, B.A.; FROLOV, V.I.

Epidemiological situation in the Republic of the Congo; according to data of a group of physicians from the Soviet Red Cross in the Congo. Zhur.mikrobiol., epid.i immun. 32 no.12:15-19 D '61.  
(NIRA 15:11)

(CONGO, REPUBLIC OF THE--COMMUNICABLE DISEASES)

GODOVANYY, B.A. (Moskva)

I.G.Savchenko as a scientist, physician, and patriot; on the 100th anniversary of his birth. Fel'd. i akush. 27 no.3:28-31 Mr '62.  
(MIRA 15:4)

(SAVENCHKO, IVAN GRIGOR'EVICH, 1862-1932)

GODOVANNYY, B.A.

Relation of the intensity of antibody formation to the quantity of the lymphatic nodes included in the immunological process. Vak. i svv. no.1:194-203 '63.

Changes in the preventive activity of blood serum in relation to the intensity of the involvement of lymphoid tissue in immunogenesis. Ibid.:204-211 (NERA 18:2)

1. Moskovskiy Institut vaktsin i sывороток Im. Meshnikova.



CODOVANNY, B.A.

Role of the regional lymph nodes in the mechanism of forming  
vaccinal immunity. Report No.1: Relation between the intensity  
of humoral immunity and the number of regional lymph nodes in-  
volved in immunogenesis. Zh. mikrobiol. 40 no.7:51-55 JL'63  
(MIRA 17:1)

1. Iz Moskovskogo instituta vaktsin i syvorotok imeni Metchnik-  
kova.

SOLOV'ENNYI, B. I.

Role of regional lymph nodes in the acceleration of the formation of vaccinal immunity. Report No. 2: lymph node reaction to primary administration of corpuscular antigen. Zhur. mikrobiol., epid. i immunit. 40 no. 10:21-25 O '63. (MIRA 17:6)

1. Iz Moskovskogo instituta vaktsin i sывороток imeni Mechnikova.

LAPSHIN, Feodosiy Viktorovich; KOVALEV, N.M. [Koval'ov, N.M.],  
prof., red.; GODOVANYI, L.D. [Godovanyi, L.D.], red.

[Mineral waters and health resorts of Bukovina] Mineral'ni  
vody i kurorty Bukoviny. Uzhhorod, Vyd-vo "Karpaty " 1965.  
110 p. (MIRA 18:8)

MALY, E.;GODOVIC, A.

Epidemiology of anthrax in eastern Slovakia. Cesk. dermat. 28 no.8-9:  
337-343 Nov 1953. (CLML 25:5)

1. Of the Dermato-Venereological Clinic (Head---Docent E. Maly, M.D.),  
Kosice and of the Dermato-Venereological Department (Head---Godovic, A.  
M.D.), Michalovce.

GODOVIC, Anton

Problem of increased incidence of trichophytosis in Eastern Slavakia  
from material of the Dermatology and Venerology Department of the  
District Health Institute in Michalovce. Cesk.derm. 31 no.4:204-210  
Aug 56

1. Z dermatovener. oddel. GUNZ v Michalovciach (Predn. prim MUDr  
Anton Godovic)  
(RINGWORM, epidemiol.  
in Czech. (Cz))

GODOVIC, A.; KUBINI, L.

Occupational milker's nodes. Cesk. dermat. 36 no.5:324-328 Ag '61.

1. Dermatovenerologické oddelenie OUNZ v Michalovciach, prednosta  
MUDr. A. Godovic.

(VIRUS DISEASES case reports)

GODOVICH, L.M., inzh.

Requirements for the distribution of overtaking points on double-  
trach lines. Vest. TSNIIMPS 21 no.7:25-28 '62. (MIRA 15:12)  
(Railroads—Track)

Report of the H. W. ... on time losses  
caused by the ... of freight and passenger trains.  
Page 211 no. 1711-1717 (MIRA 18:3)



26-58-6-22/56

AUTHOR: Godovikov, A.A., Candidate of Geological and Mineralogical Sciences

TITLE: The Method of Contact Prints in Qualitative Analysis (Metod kontaktnykh otpechatkov pri kachestvennom analize)

PERIODICAL: Priroda, 1958, Nr 6, p 88-89 (USSR)

ABSTRACT: The author suggests a new method for making qualitative analyses, i.e., by contact prints. The polished surface of the mineral cut to be tested is placed upon a sheet of chemically treated photo print paper which is spread on a plate covered with tin foil. The mineral and the paper are exposed to pressure in a specially constructed press (Fig. 1) through which an electric current is sent. The paper is then removed and chemically processed, showing the proper color of the respective mineral. This method detects compounds which otherwise are hard to distinguish even under a microscope and shows the distribution of chemical substances in the sample under investigation. (Color plates 1-6). There are 6 photos, 1 figure and 1 Soviet reference.

Card 1/2

The Method of Contact Prints in Qualitative Analysis

26-58-6-22 '56

ASSOCIATION: Institut mineralogii geokhimii i kristallokhimii redkikh  
elementov Akademii nauk SSSR (Moskva)  
(Institute of Mineralogy, Geochemistry and Crystallochemistry  
of Rare Elements of the USSR Academy of Sciences, Moscow)

Card 2/2

1. Minerals-Analysis 2. Contact prints-Applications

AUTHORS: Gedovikov, A.A. and Kudryakova, V.A. SOV-11-58-10-3/12

TITLE: The Specific Nature of the Oxidation Process of Smaltite-Chloanthite (O nekotorykh osobennostyakh protsessa okisleniya shmal'tin-khloantita)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geologicheskaya, 1958, Nr 10, p 37 - 44 (USSR)

ABSTRACT: One of the characteristic peculiarities of the smaltite-chloanthite mineral is its zonal structure. These zones differ from each other in chemical **composition** and in their content of cobalt and nickel. Only cobaltic arsenide (skutterudite) is a constant component of all zones. This opinion was long ago expressed by foreign scientists [Ref. 10, 11, 13 and 15] and is now confirmed by chemical tests (Table 2) and by X-ray examinations (Table 3) of thin sections of smaltite-chloanthite taken from the same deposit. The authors describe the procedure adapted for the chemical analyses. The following names are mentioned for work in this field G.G. Lemnlayn, E.A. Ostroumov, and the chemist A.I. Pokrovskaya from the IGEM AS USSR. There are

Card 1/2

SOV-11-58-10-3/12

The Specific Nature of the Oxidation Process of Smaltite-Chloanthite

5 photos, 3 tables and 15 references, 8 of which are Soviet, 3 German, 2 French and 2 American.

SUBMITTED: April 23, 1957

ASSOCIATION: Institut mineralogii, geokhimii i kristalloghimii redkikh metallov AN SSSR, Moskva (The Institute of Mineralogy, Geochemistry and Crystallo-Chemistry of Rare Metals of the AS USSR, Moscow)

1. Minerals--Chemical analysis 2. Minerals--X-ray 3. Minerals  
--Oxidation

Card 2/2

GODOVIKOV, A.A.

Dependence of lattice parameters of skutterudite minerals on their  
chemical composition. Trudy Min.muz. no.10:57-73 '59.

(MIRA 16:8)

(Skutterudite)

GODOVIKOV, A.A.

Some characteristics of the isomorphism of cobalt, nickel, and  
iron diarsenides. Trudy Min.muz. no.10:74-85 '59, (MIRA 16:8)  
(Isomorphism) (Arsenides)

3(5,8),5(2,4)

AUTHORS: Sindeyeva, N. D., Godovikov, A. A. SOV/20-127-2-55/70

TITLE: On the Isomorphism Between Sulphur and Tellurium in Galenite

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 2, pp431-434 (USSR)

ABSTRACT: S, Se and Te are in the VI<sup>th</sup> group of the periodic system of elements and are chemical analogs. In nature they are connected by monotypical hypergenic processes and occur in the same deposits. They are arranged in an isomorphous series in geochemical papers (Refs 1,2,4). The isomorphism of S and Se is undoubted, that of S and Te, is, however, unclear. The possibility of an isomorphous substitution of the elements is known to be to a considerable extent caused by the size of the ionic-, atomic-, or covalent radii. The sulphides are to a considerable extent covalent compounds. Selenides and tellurides to a still greater extent. The authors wanted to examine experimentally the boundaries of the isomorphous substitutions between S and Te. For this purpose PbS (galenite) and PbTe (altaite) were chosen as compounds of one and the same structural type (NaCl) which have also the same type of

Card 1/3

On the Isomorphism Between Sulphur and  
Tellurium in Galenite

SOV/20-127-2-55/70

chemical bond and further analogies. They were produced pyrosynthetically from elements (in stoichiometric quantities). Table 1 shows the lattice parameters and the microhardness in the series of these compounds. The tellurium quantity which penetrated into the galenite lattice was considerably shortened with the reduction of the altaite concentration to 5% (the parameters were much less changed). The parameters were not changed at an altaite content of 2 and 0.25%. This proves the limitedness of the S- and Te-isomorphism. Considerable excess concentrations of Te are necessary for its occurrence. A solid solution is produced here since the microhardness increases with rising content of PbTe in the sample. By a galenite synthesis in the presence of a considerable tellurium excess a mixture was produced consisting on the whole of galenite and tellurium (Fig 4); it had a characteristic structure. The galenite parameter was, however, not changed.

Card 2/3



On the Isomorphism Between Sulphur and  
Tellurium in Galenite

807/20-127-2-55/70

The formation of a small altaite quantity in the mixture which cannot be determined by the phase analysis may be caused by an inconsiderable sulphur loss in the opening of the soldered experimental ampule. It could not be proved that selenium plays the role of a mediator when tellurium penetrates into the galenite lattice. There are 4 figures, 3 tables, and 5 references, 4 of which are Soviet.

ASSOCIATION: Institut mineralogii, geokhimii i kristallografii redkikh elementov (Institute of Mineralogy, Geochemistry, and Crystal Chemistry of the Rare Elements)

PRESENTED: January 26, 1959, by N. V. Belov, Academician

SUBMITTED: November 14, 1958

Card 3/3

GODOVIKOV, A.A.

Sequence in the isolation of cobalt arsenides, nickel, and iron  
in hydrothermal ore veins. Geol. i geofiz. no.6:36-48 '60.

(MIRA 13:9)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR.  
(Mineralogy)

GODOVIKOV, A.A.; FEL'YANCHICH, F.A.

Discovery in the U.S.S.R. of laitakariite, a rare bismuth selenide.  
Geol. i geofiz. 10:19-26 '66. (MIRA 14:2)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR,  
Novosibirsk.  
(Bismuth selenide)

GODOVIKOV, A.A.; DISTANOV, E.G.; KOSYGIN, Yu.A.; KUZNETSOV, V.A.; SAKS, V.N.;  
SOBOLEV, V.S.; SOKOLOV, B.S.; TROPIMUK, A.A.; SHAKHOV, F.N.

In memory of Oleg Dmitrievich Levitskii. Geol. i geofiz. no.3:116-  
117 '61. (MIRA 14:5)

(Levitskii, Oleg Dmitrievich, 1909-1961 )

GODOVIKOV, A.A.

Diagnostics of cobalt, nickel, and iron arsenides. Trudy Min.  
muz. no.11:30-64, '61. (MIRA 16:7)

(Arsenides)

GODOVIKOV, A.A.; D'YACHKOVA, I.B.

Ferrophosphates from the Moscow region. Zap.Vses.min.ob-va 90  
no.6:735-739 '61. (MIRA 15:2)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR.  
(Moscow region--Phosphates)

SOBOLEV, V.S.; GODOVIKOV, A.A.

Present-day problems of experimental mineralogy and petrography.  
Geol. i geofiz. no.10:93-103 '62. (MIRA 15:12)

1. Institut geologii i geofiziki Sibirskogo otdeleniya  
AN SSSR, Novosibirsk.  
(Petrology)

[illegible]



S/192/62/003/001/002/002  
D258/D303

AUTHOR: Godovikov, A.A.

TITLE: X-ray investigation of the individual representatives  
of the system Bi-Se

PERIODICAL: Zhurnal strukturnoy khimii, v.3, no. 1, 1962, 44-50

TEXT: The author investigated the Bi-Se system, by taking x-ray photographs of (a)  $\text{Bi}_{4.26}\text{Se}_3$  and (b)  $\text{Bi}_2\text{Se}_3$  and comparing the results with literature data for (c) BiSe; (d)  $\text{Bi}_2\text{Se}_3$ ; (e) metallic Bi; and (f) paraganajuatite. The present work was aimed at defining the range of solid solutions; the formation of the latter, from BiSe with either Bi or Se, has been shown by N.Kh Abrikosov et al (Ref.3-4: Doklady na soveshchani po issledovaniya diagramm sostoyaniya metallicheskih system. Izd. AN SSSR, M., 1956, p. 27 (Papers presented at the Conference for the Study of Equilibrium Diagrams of Metal Systems); Zh. neorg. khimii, 5,9, 2011 (1960), and the existence of a continuous series of solid solutions,

Card 1/3

X-ray investigation of the ...

S/192/62/003/001/002/002  
D258/D303

ranging from  $\text{Bi}_2\text{Se}_3$  to  $\text{BiSe}$ , has been forwarded by S.A. Semiletov (Ref. 5-6: Tr. Inst. Kristallografii AN SSSR, 10, 76 (1954); Dokl. AN SSSR, 100, 6, 1079 (1955)). Specifically, optically homogeneous samples of annealed  $\text{Bi}_2\text{Se}_3$  and of  $\text{Bi}_2\text{Se}_3$  were submitted to x-ray analysis, using Cu radiation and a Ni-filter. The parallel tabulation of the x-ray data for all 6 samples showed their great similarity, especially between samples (b), (d) and (f); this is shown by comparison of calculated lattice parameters. A comparison between  $\text{Bi}_{4.26}\text{Se}_3$ ,  $\text{BiSe}$ , and  $\text{Bi}_2\text{Se}_3$  showed also that both their respective intensity and d values changed regularly with the change in composition, and that a is almost proportional to the composition. Consequently, the existence of a wide range of solid solutions, ranging from  $\text{Bi}_2\text{Se}_3$  through  $\text{BiSe}$  up to  $\text{Bi}_{4.26}\text{Se}_3$  was postulated. It was assumed, however, that the actual range may be wider, namely, from  $\text{Bi}_2\text{Se}_3$  to  $\text{Bi}_{4.26}\text{Se}_3$ . There are 1 table and 15 references: 7 Soviet-bloc and 8 non-Soviet-bloc.

Card 2/3

GODOVIKOV, A.A.; SAKHAROVA, M.S.

Some remarks concerning I.U.S. Nesterova's works on the results  
of chemical analyses of sulfides and related minerals. Geol.  
1 geofiz. no.8:89-94 '63. (MIRA 16:10)

(Mineral—Analysis)

GODOVIKOV, A.I.; FER'YANCHICH, F.A.

Bismuth selenide "laitakariite". Trudy Inst.geol.i geofiz.Sib.otd.  
AN BSSR no.15:7-30 '63. (MIRA 17:4)

GODCHIKOV, A.A.

Organization of the Laboratory of Experimental Mineralogy at  
the Institute of Geology and Geophysics of the Siberian Branch  
of the Academy of Sciences of the U.S.S.R. Trudy Inst.geol.i  
geofiz.Sib.otd.AN SSSR no.15:317-322 '63. (MIRA 1744)

GODOVIKOV, A.A.; KOLONIN, G.R.

Native bismuth as a geological thermometer. Part 1:  
Morphologic characteristics of native bismuth. Trudy  
Inst. geol.i geofiz. Sib.otd. AN SSSR no.30:7-29 '64.

Native bismuth as a geological thermometer. Part 2:  
Morphologic and microscopic characteristics of  
artificial bismuth. Ibid.:30-46

(MIRA 18:11)

GUDOVYKOV, A.A.; KOLONIN, G.R.

Experimental studies of the characteristics of bismuth extraction  
and possibilities of its use as a geological thermometer. Geol.  
rud. mestorozh. 7 no.2:97-101 Mr-Apr '65. (MIRA 18:7)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR,  
laboratoriya eksperimental'noy mineralogii.

GODOVIKOV, A.A.; BARANOVSKIY, S.N.; SENDEROVA, V.M.

Some electric properties of the cosalite of the Kara-Oba deposit.  
Dokl. AN SSSR 163 no.1:186-188 J1 '65. (MIRA 18:7)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR i  
Novosibirskiy elektrotekhnicheskiy institut.



1. The following information is being furnished to you for your information and use only. It is not to be distributed outside your agency.

GODOVIFOV, N.M. --

"Methylenemalonic and Methylene-bis-malonic Ester in the Synthesis of Barbituric Acids." Cand Chem Sci, Moscow Order of Lenin State U imeni M. V. Lomonosov, 3 Nov 54. (VM, 21 Oct 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (10)

SO: Sum. No. 181, 5 May 55

Godovikov, N. N.

V. Barbituric acids. I. Synthesis of methylenobis-  
alkylbarbituric acids. R. Ya. Levina and N. N. Godovikov.  
J. Gen. Chem. U.S.S.R. 24, 1229-33 (1954) (Engl.  
translation).—See C.A. 49, 12303h. D. M. H.

3

(1)  
R. H.

GOLOVINOV, A. N.

USSR/ Chemistry      Synthesis methods

Card : 1/1      Pub. 151 - 30/35

Authors : Levina, R. Ya., and Godovikov, N. N.

Title : Barbituric acids. Part 1.- Synthesis of methylene-bis-5-alkylbarbituric acids

Periodical : Zhur. ob. khim. 24, Ed. 7, 1242 - 1248, July 1954

Abstract : A series of hitherto unknown methylene-bis-5-alkylbarbituric acids were synthesized by the reaction of urea with methylene-bis-alkylmalonic esters and the chemical formulas of the derived acids are presented. The results of alkylation of methylene-bis-malonic ester in the presence of sodium ethylate and alkyl halides, are tabulated. Eight German, 5 USA, 3 USSR and 1 Swiss references. Tables.

Institution : State University, Moscow

Submitted : February 8, 1954

6-20-1974

Barbituric acids. II. Synthesis of methylenedioxy-  
alkenylbarbituric acids. R. Ya. Levina and N. M. Gorkov.  
Izv. Akad. Nauk SSSR, Ser. Khim., 1974, 1350-1354 (Engl.  
translation).—See C.A. 49, 11077k. H. M. R.

GODOVIKOV, N. N.

USSR/Chemistry

Card 1/1 : Pub. 151 - 18/42

Authors : Levina, R. Ya., and Godovikov, N. N.

Title : Barbituric acids. Part 2.- Synthesis of methylene-bis-5-alkenyl barbituric acids

Periodical : Zhur. ob. khim. 24/9, 1572-1575, Sep 1954

Abstract : The reaction between methylene-bis-sodiummalonic ester with primary unsaturated chlorides - allyl chloride and methallyl chloride - was investigated. The synthesis of hitherto unknown methylene-bis-5-allylbarbituric acid, methylene-bis-5-methallylbarbituric acid and 5-secondary-pentenylbarbituric acid, is described. The behavior of alkenyl allyl halides in this reaction was found to be similar to that of alkyl halides. The secondary reaction, namely, the splitting of the intermediate product, which takes place during allylation or alkylation of the methylene-bis-malonic ester is analyzed. Six references: 1-USSR; 3-German and 2-USA (1882-1954). Table.

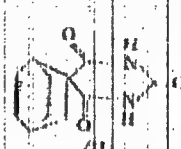
Institution : State University, Moscow

Submitted : March 26, 1954

GO DOVIRKOV, N. N.

✓ **Barbituric acids. III. Methylene malonic ester in diene synthesis.** Preparation of barbituric acids of spiran type. *Zh. Obshch. Khim.* 25, 687-6 (1955); cf. C.A. 49, 11007i, 12336i; Bachman and Tanager, C.A. 34, 380i. Heating 200 g.  $\text{CH}_2(\text{CO}_2\text{Et})_2$ , 93 g. 40% formalin, and 3.2 g.  $\text{Et}_3\text{N}$  in hrs. gave di-*Et* methylenemalonate, b. 160-3°, which polymerized over 24 hrs. yielding 70% polymeric ester, m. 151-6°. This (19 g.) depolymerized by heating to 220-40° and the monomer dist. into a reaction flask with 15 ml. dry  $\text{CaH}_2$ , to which was then added the desired diene (cyclopentadiene or cyclohexadiene) and the mixt. heated 6 hr. yielded, resp.: 60% 1,1-dicarboethoxy-2,5-endomethylene-3-cyclohexene, b. 129-30°, n<sub>D</sub><sup>20</sup> 1.4690, d<sub>4</sub> 1.0752, and 27% 1,1-dicarboethoxy-2,5-endomethylene-3-cyclopentene, b. 147-22°, d<sub>4</sub> 1.1201. Hydrogenation gave, resp.: 60% 1,1-dicarboethoxy-2,5-endomethylene-cyclohexane, b. 121-5°, n<sub>D</sub><sup>20</sup> 1.4595, d<sub>4</sub> 1.0764, and 83% 1,1-dicarboethoxy-2,5-endomethylene-cyclopentane, b. 141-4°, n<sub>D</sub><sup>20</sup> 1.4048, d<sub>4</sub> 1.0751. These

heated 1.5-2 hr. with 20%  $\text{Et}_3\text{N}$  gave, resp.: 30% 2,5-endomethylene-3-cyclohexene-1,1-dicarboxylic acid, m. 118-4°, n<sub>D</sub><sup>20</sup> 1.4714, d<sub>4</sub> 1.0752, and 60% 2,5-endomethylene-3-cyclopentene-1,1-dicarboxylic acid, m. 129-30°. The esters were condensed with  $\text{CO}(\text{NH}_2)_2$  as catalyst, yielding the following barbituric acids (% yield and m.p. given): I, 64, 200° (decolor.); II, 24, 36°; III, 18-4, 122-1°; dihydrogen succinate, 11, 105-6°.



G. A. Bond, p. 67

GODOVIKOV, N. N.

✓ Barbituric acids. IV. Synthesis of polybarbituric acids.  
R. Ya. Levina, N. N. Godovikov, and P. K. Vellin.  
Gen. Chem. U.S.S.R. 25, 2417-24 (1955) (Engl. trans-  
lation).—See C.A. 50, 9430d.

Chem



G O O P I N G , N . N

Barbituric acids. IV. Synthesis of spirobarbituric acid. R. Ya. Levina, N. N. Godovikov and F. K. Valichko (Zh. obshch. Khim., 1955, 25, 2522-2527).—In an earlier investigation methylenemalononic ethers were reacted with cyclopentadiene and cyclohexadiene. Saturated and unsaturated spirobarbituric acids were obtained, containing endomethylene or endoethylene bridges in carbocyclic radicals. Further study was made of reactions between methylenemalononic ethers and diene hydrocarbons with open chains of carbon atoms, e.g., penta-1:3-diene, isoprene and 2:4-dimethylpenta-1:3-diene. In the usual conditions of diene synthesis, the following were obtained: 1:1-dicarbethoxy-2-methyl-, 1:1-dicarbethoxy-4-methyl- and 1:1-dicarbethoxy-2:2:4-trimethyl-, cyclohex-3-ene, in yields of 25, 27 and 24%, respectively, showing that in all conditions of diene synthesis methylenemalononic ethers behave as dienophiles. With alkadienes of different configuration, under the same conditions, adducts are formed of similar characteristics but in low yields. Esters of cyclohexene- and cyclohexanemalononic acids behave in the manner of disubstituted NaOEt into barbituric acids of spiro-form. It was noted that strong dienophiles like malonic anhydrides react with penta-1:3-diene with less ease than with isoprene and not at all with 2:4-dimethylpenta-1:3-diene, indicating that methylmalonic ethers are stronger dienophiles than malonic anhydrides. A. L. H.

GODOVIKOV, N. N.

Synthesis of chlorides of thiophosphonic and thiophosphinic acids. M. I. Kabachnik and N. N. Godovikov (Inst. Hetero-Gr. Compounds, Acad. Sci. U.S.S.R., Moscow). Doklady Akad. Nauk S.S.S.R. 110, 217-18 (1966). P.S. with chlorides of phosphonic or phosphinic acids at 105-100° readily yields the corresponding chlorides of the S-contg. acids:  $5 \text{ RPOCl}_2 + \text{P}_2\text{S}_5 \rightarrow 5 \text{ RPSCl}_2 + \text{P}_2\text{O}_5$  and  $5 \text{ R}_2\text{POCl} + \text{P}_2\text{S}_5 \rightarrow 5 \text{ R}_2\text{PSCl} + \text{P}_2\text{O}_5$ . The reactants (0.1 mole acid and 0.025 mole  $\text{P}_2\text{S}_5$ ) are heated 3-4 hrs. in a  $\text{CO}_2$  atm. at 135-80°, the liquid portion is distd., washed with cold  $\text{H}_2\text{O}$ , dried, and redistd. Thus were obtained (compd., b.p.,  $n_D^{20}$ , and  $d_4^{20}$  given): 85%  $\text{MePSCl}_2$ , b. 34-5°, 1.5630, 1.4302; 69%  $\text{CICH}_2\text{PSCl}_2$ , b. 68-9°, 1.5770, 1.5084; 71%  $\text{EtPSCl}_2$ , b. 69-81°, 1.5450, 1.3643; 53%  $\text{PrPSCl}_2$ , b. 66-7°, 1.5360, 1.3006; 71%  $\text{C}_6\text{H}_5\text{PSCl}_2$ , b. 76-7°, 1.6322, 1.3047; 76%  $(\text{C}_6\text{H}_5)_2\text{PSCl}_2$ , b. 80-80°, 1.6670, 1.4713; 66%  $\text{PhPSCl}_2$ , b. 87-8°, 1.6350, 1.4013. These were characterized as anilides, formed in 100% yields from the chlorides:  $\text{MePS}(\text{NHPh})_2$ , m. 177-8°;  $\text{CICH}_2\text{PS}(\text{NHPh})_2$ , m. 118-18.5°;  $\text{EtPS}(\text{NHPh})_2$ , m. 113-14°;  $\text{PrPS}(\text{NHPh})_2$ , m. 133°;  $\text{C}_6\text{H}_5\text{PS}(\text{NHPh})_2$ , m. 122-3°;  $(\text{C}_6\text{H}_5)_2\text{P}(\text{NHPh})_2$ , m. 135.5-3°;  $\text{PhPS}(\text{NHPh})_2$ , m. 175-6°. In calcul. of mol. refraction of the chlorides the at. value for Cl was taken as 6.336, the value for P in thiophosphonic derivatives as 4.27, and in thiophosphinic as 4.86 (cf. Kabachnik, and

*Kabochnik, M.I., Godovikov, N.N.*

Shepelova, C.A. 49, 813), while the value for  $S$  of 10.43 was employed; with these const. excellent agreement of calcd. and observed values was found; if the value for  $S$  was taken as 9.70, the observed values were too high on an av. of 0.83; the latter increment was added to the refraction of  $S$  to allow for constitutional variation, yielding the new value of 10.63. The  $PrPOCl_2$  used as one of starting materials was prepd. from  $PrPO(OH)_3$  and  $PCl_5$  by heating at 130-60° with distn. of  $POCl_3$ ;  $PrPOCl_2$  bp 69-70°/1 mm Hg,  $n_D^{20}$  1.4630,  $d_4^{20}$  1.3148.

O. M. Kozlov

BODOVIKOV, N. N.

7  
Synthesis of chlorides of thiophosphoric and thiophosphinic acids / M. I. Kabachnik and N. N. Bodoikov. *Izv. Akad. Sci. U.S.S.R., Ser. Chem.* 1970, 640-641 (1970) [Russian translation].—See C.A. 51, 4082g. H. L. H.

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4  
1E3  
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AUTHORS:

Kabachnik, I. I., Godovikov, N. SOV/79-28-6-50/63  
 Paykin, D. M., Shabanova, M. P., Gamber,  
 N. M., Yefimova, L. F.

TITLE:

Insecticides of Organophosphorus Compounds - Some  
 Derivatives of Methylthiophosphinic- and Methylthio-  
 phosphinic Acids (Fosfororganicheskiye insektitsidy,  
 nekotoryye proizvolnyye metiltiofosfinovoy i  
 metilditiofosfinovoy kislot)

PERIODICAL:

Zhurnal obshchey khimii, 1968, Vol. 28, Nr 6, pp.  
 1568 - 1573 (USSR)

ABSTRACT:

The majority of phosphorus organic insecticides are  
 derivatives of thiophosphoric-, dithiophosphoric- and  
 pyrophosphoric acids (Refs 1 - 3). In publications also a  
 few insecticides are described which are derivatives of  
 phosphinic- and dithiophosphinic acids; among them are the  
 methylphosphinates and methylthiophosphinates. The latter  
 contain substituted aryl groups (Ref 4), the ethylxanthoyl-  
 group, as well as other groups (Refs 4,5) and the  
 O-ethyl-O-p-nitrophenylester of phenylthiophosphinic acid  
 ("E.P.N.") (Ref 6). This ester is the only insecticide

Card 1/3

Insecticides of Organophosphorus Compounds - Some  
Derivatives of Methylthiophosphinic - and  
Methyldithiophosphinic Acids

307/10-28-6-30/63

of the series of thiophosphinic acids which is of practical importance. Therefore it was of interest to the authors to synthesize derivatives of alkylthio- and alkylthiophosphinic acids which have ester groupings analogous to those of well-known insecticides of thiophosphoric- and dithiophosphoric acid. The authors obtained from the dichloroanhydride of methylthiophosphinic acid the chloroanhydrides of the acid esters of methylthiophosphinic acid with methoxy-, ethoxy- and propoxygroups. Derivatives of methylthiophosphinic- and methyldithiophosphinic acid with groupings corresponding to well-known insecticides (Tiofos, Metafos, Karbofos, Potazan and Sistoks) were synthesized. The insecticide properties of the synthesized compounds were investigated in the laboratory using the autumn bugs on the plant "Eurygaster intergriceps Put" as well as the fullgrown caterpillars on the plant "Pseudococcus maritimus Ehrh". The insecticide effect of the mentioned synthesized compounds did not correspond to the activity of the known insecticides

Card 2/3

Insecticides of Organophosphorus Compounds - Some 307/19-18-b-50/63  
Derivatives of Methylthiophosphinic- and  
Methyldithiophosphinic Acids

of thiophosphoric- and dithiophosphoric acids. Only the preparation Gd-18 (a metaphos. analog) exceeds the effect of Metafos (Metafos) in its application against the bug of the first mentioned plant. There are 3 tables and 8 references, 3 of which are Soviet.

SUBMITTED: April 29, 1957

1. Insecticides--Synthesis
  2. Phosphorous compounds (organic)
- Synthesis

Card 3/3

5 (3) .

AUTHORS:

Kabachnik, M. I., Godovikov, N. N., SOV/79-29-7-19/83  
Paykin, D. M., Shabanova, M. P., Yefimova, L. F., Gamper, N. N.

TITLE:

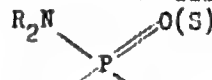
Organophosphorous Insecticides (Fosfororganicheskiye insektitsidy).  
VI. Amidoesters of the Thio- and Dithiophosphoric Acids  
Containing a  $\beta$ -Ethyl Mercapto Ethyl Grouping (VI. Amidoefiry  
tiofosfornoy i ditiyosfornoy kislot, soderzhashchiye  $\beta$ -etil-  
merkaptotetil'nyu gruppirovku)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2182-2190 (USSR)

ABSTRACT:

In 1936 G. Schrader (Ref 1) discovered the insecticide  
properties of the phosphoric- and thiophosphoric acid amides.  
The derivatives of the dialkyl amido- and dialkyl amidothio-  
phosphoric acid of the type



, where R and R' denote alkyls and Ac substitutes of acyl character such as Cl, F, CN, CNO,  $CH_3COO$  and others, which he synthesized show

contact insecticide properties of vegetative effect. Other compounds of similar type with the phenyl- (Refs 1, 2), azide (Ref 3), and other groups (Refs 4-7) followed. Most of the

Card 1/3



Organophosphorous Insecticides. VI. Amidoesters of SOV/77-27-7-19/83  
the Thio- and Dithiophosphoric Acids Containing a  $\beta$ -Ethyl Mercapto Ethyl  
Grouping

insecticides of phosphoric acid have only a weak contact- and a strong vegetative effect. Some of them are used in practical applications (Ref 8). On the other hand, it was of interest to examine this activity in the amido esters of thiophosphoric and dithiophosphoric acid with a  $\beta$ -ethyl mercapto ethyl grouping since it could be assumed that they would also show a strong vegetative activity. These esters have hitherto remained unknown with few exceptions (Refs 11, 12). The compounds (I), (II), and (III), the first two of which were obtained as acid chlorides according to scheme 3, were used as initial products for these amido esters. In reacting the above acid chlorides with  $\beta$ -oxydiethyl sulphide in the presence of powder sodium hydroxide the thiophosphates (Gd-50), (Gd-52), and (Gd-64) (Scheme 4) resulted. The compounds obtained were isomerized into the thiophosphates (Gd-53), (Gd-54), and (Gd-66) at 160-170° during 8-10 hours (Scheme 5). Moreover, the thiophosphates (Gd-55) and (Gd-56) were synthesized by the reaction according to scheme 6. The constants and yields of the new insecticides are listed in table 1 (details are given in the

Card 2/3

Organophosphorous Insecticides. VI. Amidoesters of the SOV/79-29-7-19/83  
Thio- and Dithiophosphoric Acids Containing a  $\beta$ -Ethyl Mercapto Ethyl Grouping

experimental part and in tables 2 and 3). In heating tetramethyl diamidochlorophosphate with  $P_2S_5$  tetramethyl diamidothiophosphate is formed by replacement of the oxygen atom by sulphur. Some amido esters such as (Gd-53), (Gd-54), and (Gd-56) show a vegetative activity against spinning-mites. There are 3 tables and 17 references, 11 of which are Soviet.

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Card 3/3

PODOLSKY, N. M., KAPAZANI, L. I., MISTAYEV, V. A., KATKINA, YE. K.,  
FIRSHTEIN, N. K., MIKHAILOV, V. YA., KIBACHNIK, V. S., YAKOVLEV, V. A.,  
VOLEKOVA, R. I. (USSR)

"The Significance of Onic Group and of its Position in an  
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with Cholinesterases and for Pharmacologic Effects."

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MASTRYUKOVA, T.A.; MIKHEL'SON, M.Ya.; ROZHNKOVA, Ye.K.;  
FRUYENTOV, N.K.; YAKOVLEV, V.A.

Chemical structure and biological activity of phosphorus  
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1. Laboratory for the Pharmacology and Biochemistry of  
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Evolutionary Physiology, Academy of Sciences of the U.S.S.R.,  
and Laboratory of Organophosphorus, Institute of Elementoorganic  
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(CHOLINESTERASES)  
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(Cholinesterases) (Phosphonic acid)

BRESTKIN, A.P.; GODOVIKOV, N.N.; GODYNA, Ye.I.; KABAICHNIK, M.I., akademik;  
MIKHEL'SON, M.Ya.; ROZENGART, Ye.V.; YAKOVLEV, V.A.

Anticholinesterase properties of o-ethyl-S-alkylmethylthiophosphi-  
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ACCESSION NR: AP5018747

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AUTHOR: Brestkin, A. P.; Brik, I. L.; Volkova, R. I.; Godovikov, N. H.; Teplov, N. Ye.; Kabachnik, M. I. (Academician)

TITLE: Anticholinesterase properties of O,O-diethyl S-(2-arylmethylamino)-ethyl thiophosphates and their methylsulfonium methyl sulfates

SOURCE: AN SSSR. Doklady, v. 163, no. 2, 1965, 365-368

TOPIC TAGS: nerve gas, chemical warfare agent, cholinesterase inhibitor, anti-cholinesterase activity, thiophosphate ester

ABSTRACT: One of the most effective ways to increase the activity of organophosphorus cholinesterase inhibitors is to introduce an onium group in their structure at the same distance from the phosphoryl group as the distance between the carbonyl carbon and the quaternary nitrogen in acetylcholine. Previous work showed that the sharp increase in anticholinesterase activity observed on transition from sulfides  $\text{CH}_3(\text{C}_2\text{H}_5\text{O})\text{P}(\text{O})\text{SCH}_2\text{CH}_2\text{SC}_2\text{H}_5$  to sulfonium compounds  $[\text{CH}_3(\text{C}_2\text{H}_5\text{O})\text{P}(\text{O})\text{SCH}_2\text{CH}_2\text{S}^+(\text{CH}_3)_2\text{C}_2\text{H}_5]^-\text{SO}_4\text{CH}_3^-$  is due not to the inductive effect, but to the formation of an ionic bond between the inhibitor and the anionic center of cholinesterase. The effect of the magnitude of the effective onium charge on the anticholinesterase activity of the

Card 1/3

L 58973-65

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above compounds was investigated. The compounds investigated were O,O-diethyl S-( $\beta$ -arylmethyl-amino)-ethyl thiophosphates  $(C_2H_5O)_2P(O)SCH_2CH_2N(CH_3)C_6H_4R$ , and their methylsulfonium methyl sulfates  $[(C_2H_5O)_2P(O)SCH_2CH_2N(CH_3)_2C_6H_4R]SO_3CH_3$ . Aryl substituents R of different electronegativities were used:  $CH_3$ ,  $Cl$ ,  $OCH_3$ . Anticholinesterase activity was evaluated from the reaction rate constants of inhibitors with serum cholinesterase (acetylcholine hydrolase) in M/50 phosphate buffer (pH 7.5) at 25°C. The physical constants of the inhibitors and their reaction rate constants are given in tabular form. In compounds with a ternary N, the presence of aryl groups decreases anticholinesterase activity, presumably because of the lesser ability of aromatic amines to form ammonium cations in aqueous solutions. On the other hand, compounds with a quaternary N and aryl groups show very strong activity. In addition, to increasing the effective positive charge, the hydrophobic aryl radicals facilitate the sorption of the inhibitor on the enzyme surface. The existence of the positive charge appears to be the most important factor determining the high activity of such inhibitors. The nature of the substituents R, showing good linear correlation with the reaction rate, and the steric compatibility of the aryl group with the anionic site of the enzyme are of secondary importance. Orig. art. has: 2 tables and 1 figure. [VS]

Card 2/3